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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,047	03/04/2002	Sashikanth Chandrasekaran	50277-1776	9683

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HICKMAN PALERMO TRUONG & BECKER/ORACLE
2055 GATEWAY PLACE
SUITE 550
SAN JOSE, CA 95110-1089

EXAMINER

CORRIELUS, JEAN M.

ART UNIT	PAPER NUMBER
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2162

DATE MAILED: 09/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,047

Applicant(s)

CHANDRASEKARAN ET AL.

Examiner

Jean M. Corrielus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-14, 16-18, 23-32 and 34-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-14, 16-18, 23-32 and 34-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the amendment filed on June 6, 2005, in which claims 5-15, 16, 18, 23-32 and 34-36 are presented for further examination.

Information Disclosure Statement

2. The information disclosure statement (IDS) filed on June 13, 2005, July 11, 2005 and August 13, 2005 complies with the provisions of M.P.E.P 609. It has been placed in the application file. The information referred to therein has been considered as to the merits.

Drawings

3. Applicants are required to furnish the formal drawings in response to this office action if *the formal drawings have not been submitted*. No new matter may be introduced in the required drawings. Failure to timely submit a drawing will result in ABANDONMENT of the application.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 5-15, 16, 18, 23-32 and 34-36 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, specifically, as directed to an abstract idea.

Claims 5-15, 16, 18, 23-32 and 34-36 in view of MPEP section 2106 IV.B.2. (b) define non-statutory processes because they merely manipulate an abstract idea without a claimed

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limitation to a practical application. The language of the claim raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. Data structure not claimed as embodied in computer-readable media is descriptive material per SE and is not statutory because they are neither physical nor statutory processes. Structural and functional interrelationship with a general-purpose computer for permitting claimed functions to be realized are not provided in the claims. In contrast, a claimed system should define structural and functional interrelationships between data structures or functional parts and a computer system which permit the data functions to be realized, and is statutory. Thus, the claimed are rejected as being non-statutory. Additionally, the invention, as claimed, is directed to the manipulation of an abstract idea with no practical application in the technology arts.

The Supreme Court has repeatedly held that abstractions are not patentable. "An idea of itself is not patentable". Rubber-Tip Pencil Co. V. Howard, 20 wall. 498, 07. Phenomena of nature, though just discovered, mental processes, abstract intellectual concepts are not patentable, as they are the basis tolls of scientific and technological work Gottschalk V. Benson, 175 USPQ 673, 675 (S Ct 1972). It is a common place that laws of nature, physical phenomena, and abstract ideas are not patentable subject matter Parker V. Flook, 197 USPQ 193, 201 (S Ct 1978). A process that consists solely of the manipulation of an abstract idea is not concrete or tangible. See In re Wamerdam, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1754, 1759 (Fed. Cir. 1994). See also Schrader, 22 F.3d at 295, 30 USPQ2d at 1459.

The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (*Brenner v. Manson*, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); *In re Ziegler*, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)). Accordingly, a complete disclosure should contain some indication of the practical application for the claimed invention, i.e., why the applicant believes the claimed invention is useful.

Apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement. See *Arrhythmia*, 958 F.2d at 1057, 22 USPQ2d at 1036. Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For example, a claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35 U.S.C. 101 since the information stored may have some "real world" value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to have a practical application.

Claim 5 represents an abstract idea, which do not provide a practical application in the technological arts. There is no manipulation of data nor there any transformation of data from one state to another being performed in "A method of managing information about where to

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begin recovery after a failure” in claim 5. Actually, no post computer process activity is found in the technological arts. The method of managing information about where to begin recovery after a failure. Thus, no physical transformation is performed, no practical application is found in the claims. Such managing information as claimed can be done in a piece of paper, where one having ordinary skill in the art would produce a random number a data record and compare that random number with the previously random number in the sheet. Also, the claims do not appear to correspond to a specific machine or manufacture disclosed within the specification and thus encompass any product of the class configured in any manner to perform the underlying process, and are thus rejected as being directed. Claim 5 is not **tangibly embodied** in a manner so as to **be executable** as the only hardware is in an intended use statement. Therefore, claim 5 is directed to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. Applicant is advised to amend the claims by specifying the claim being directed to a practical application and producing a tangible result **being executed** by a general-purpose computer in order to correct the above indicated deficiencies.

The dependent claims 6-9 are rejected for fully incorporating the errors of their respective base claims by dependency. Thus, claims 6-9 are merely abstract idea and are being processed without any links to a practical result in the technology arts and without computer manipulation. They are not **tangibly embodied** in a manner so **as to be executable** as the only hardware is in an intended use statement.

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Claims 10 and 12 represent an abstract idea, which do not provide a practical application in the technological arts. There is no manipulation of data nor there any transformation of data from one state to another being performed in “A method for recovering after a failure” in claims 10 and 12. Actually, no post computer process activity is found in the technological arts. The method for recovering after a failure is not a physical transformation. Thus, no physical transformation is performed, no practical application is found in the claims. Such recovering as claimed can be done manually, where one having ordinary skill in the art would produce a random number a data record and compare that random number with the previously random number in the sheet. Also, the claims do not appear to correspond to a specific machine or manufacture disclosed within the specification and thus encompass any product of the class configured in any manner to perform the underlying process, and are thus rejected as being directed. Claims 10 and 12 are not **tangibly embodied** in a manner so as to *be executable* as the only hardware is in an intended use statement. Therefore, claims 10 and 12 are directed to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. Applicant is advised to amend the claims by specifying the claim being directed to a practical application and producing a tangible result *being executed* by a general-purpose computer in order to correct the above indicated deficiencies.

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The dependent claims 11 and 13-14 are rejected for fully incorporating the errors of their respective base claims by dependency. Thus, claims 11 and 13-14 are merely abstract idea and is being processed without any links to a practical result in the technology arts and without computer manipulation. It is not **tangibly embodied** in a manner so as to be executable as the only hardware is in an intended use statement.

Claims 16 and 17 represent an abstract idea, which do not provide a practical application in the technological arts. There is no manipulation of data nor there any transformation of data from one state to another being performed in “A method for recovering a current version of a data item after a failure in a system” in claims 16 and 17. Actually, no post computer process activity is found in the technological arts. The method for recovering a current version of a data item after a failure in a system is not a physical transformation. Thus, no physical transformation is performed, no practical application is found in the claims. Such recovering as claimed can be done manually, where one having ordinary skill in the art would produce a random number a data record and compare that random number with the previously random number in the sheet. Also, the claims do not appear to correspond to a specific machine or manufacture disclosed within the specification and thus encompass any product of the class configured in any manner to perform the underlying process, and are thus rejected as being directed. Claims 16 and 17 are not **tangibly embodied** in a manner so as to be executable as the only hardware is in an intended use statement. Therefore, claims 16 and 17 are directed to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter

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under 35 U.S.C. 101. Applicant is advised to amend the claims by specifying the claim being directed to a practical application and producing a tangible result *being executed* by a general-purpose computer in order to correct the above indicated deficiencies.

The dependent claim 18 is rejected for fully incorporating the errors of their respective base claims by dependency. Thus, claim 18 is merely abstract idea and is being processed without any links to a practical result in the technology arts and without computer manipulation. They are not **tangibly embodied** in a manner so *as to be executable* as the only hardware is in an intended use statement.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 12-14 and 28-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 recites “a method for recovering after a failure” and claims 28 recites “a computer readable medium carrying instructions for recovering after”. It is unclear of what is being recovered after a failure. Without providing any indication, one having ordinary skill in the art would not know what has been recovered after a system. Applicant is advised to specify in the claim what has been recovered after a failure.

Claim 5 recites, “that ” in line 4; and claim 32 recites “that” in line 3; claim 35 recites “that” lines 22, 27. Pronouns are not permitted, only what is being referred by “that” should be set forth

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in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 12-14 and 30-32 rejected under 35 U.S.C. 102(b) as being anticipated by Peter Triantafillou (hereinafter “Peter”) Article entitled “Recovering in Large distributed systems with replicated data”.

As to claims 12 and 30, Peter discloses the claimed “if it is unclear whether a particular version of a data item has been written to disk, then performing the steps of without attempting to recover said data item, marking dirtied cached versions of said data item that would have been covered if said particular version was written to disk” (page 40, col.2, the X’s reference mentions write processing of uncertain data item, and comparison of versions of an uncertain data item in response to a read request); “when a request is made to write one of said dirtied cached versions to disk, determining which version of said data item is already on disk; and “if said particular version of said data item is already on disk, then not writing said one of said dirtied cached versions to disk” (page 40; col.2, item 1 and 2).

As to claims 13 and 31, discloses the claimed “if said particular version of said data item is not already on disk, then recovering said data item” (page 40; col.2).

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As to claims 14 and 32, discloses the claimed “if said particular version of said data item is already on disk, then informing nodes that contain said dirtied cached versions of the data item that said dirtied cached versions are covered by a write-to-disk operation” (page 40; col.2).

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 10-11 and 28-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Biliris et al., (hereinafter “Biliris”) US Patent no. 5,966,706.

As to claims 10 and 28, Biliris discloses the claimed “determining whether the failure involves only one node; and if the failure involves only said one node, then performing recovery by applying a recovery log of said node beginning at a first point in the recovery log” (col.9, lines 35-50; col.10, lines 8-12; col.10, lines 66-67; col.11, lines 2-14); and “if the failure involves one or more nodes in addition to said one node, then performing recovery by applying said recovery log of said node beginning at a second point in the recovery log, wherein said first point is different from said second point” (col.12, lines 60-67; col.13, lines 3-12).

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As to claims 11 and 29, Biliris discloses the claimed “wherein the first point is determined, at least in part, by which data items that were dirtied by said node reside in caches in other nodes; and the second point is determined, at least in part, by which data items that were dirtied by said node have been persistently stored” (col.9, lines 64-67).

Allowable Subject Matter

9. Claims 5-9, 16-18, 23-27 and 34-36 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph and 35 U.S.C. 101, set forth in this Office action.

Reasons for Indicating Allowable Subject Matter

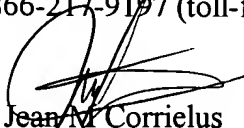
10. The following is an examiner's statement of reasons for allowance: Upon searching a variety of databases, the examiner respectfully submits that “maintaining for each of said multiple caches, a globally dirty checkpoint queue and a locally dirty checkpoint queue, wherein the globally dirty data items associated with entries in the globally dirty checkpoint queue are not retained until covered by write-to-disk operations and maintaining, for each cache, a first checkpoint record for the locally dirty checkpoint queue that indicates a first time, where all change made to data items that are presently dirty in the cache prior to the first time have been recorded on a version of the data item that is on persistent storage” in conjunction with all other limitations of the dependent and independent claims, are not taught nor suggested by the prior art of record (PTO-1449 and 892,). Therefore, all pending claims 5-9, 16-18, 23-27 and 34-36 is hereby allowed.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean M. Corrielus whose telephone number is (571) 272-4032. The examiner can normally be reached on 10 hours shift.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jean M. Corrielus
Primary Examiner
Art Unit 2162

September 8, 2005